

AMENDMENTS TO THE CLAIMS**Listing of Claims**

- 1 1. (original) An objective having a first field plane, an intermediate image
2 plane, and a second field plane, the objective comprising
3 a first partial objective having a first, convex mirror with a first central
4 mirror aperture and a second, concave mirror with a second central mirror aperture;
5 and
6 a second partial objective having a third, concave mirror with a third central
7 mirror aperture and a fourth, concave mirror with a fourth central mirror aperture;
8 wherein the first field plane and the intermediate image plane are
9 conjugate planes relative to the first partial objective, and the intermediate image
10 plane and the second field plane are conjugate planes relative to the second partial
11 objective,
12 wherein the first mirror has a first axial distance from the second mirror,
13 the second mirror has a second axial distance from the intermediate image, and said
14 first and second axial distances have a ratio between 0.95 and 1.05 relative to each
15 other; wherein the third mirror has a third axial distance Z_{M3-IM} from the second field
16 plane, and said third axial distance conforms to the relationship
17
$$0.03 \cdot Du_{M3} + 5.0 \text{ mm} < Z_{M3-IM} < \frac{0.25 \cdot Du_{M3}}{\tan(\arcsin(NA))},$$

18 NA representing a numerical aperture NA in the second field plane, and Du_{M3}

19 representing a diameter of the third mirror; and wherein further the second field plane
20 has a fourth axial distance from the first field plane, and the objective has a Petzval
21 radius whose absolute value is greater than said fourth axial distance.

1 2. (original) The objective of claim 1, wherein light rays that are not
2 vignetted by said first, second, third and fourth central mirror apertures define a
3 minimum aperture angle in the second field plane, wherein an aperture obscuration is
4 defined as the ratio between the sine of said minimum aperture angle and said
5 numerical aperture NA, and wherein the aperture obscuration has a value of less than
6 0.6.

1 3. (original) The objective of claim 2, wherein the ratio of the numerical
2 aperture NA to the aperture obscuration is greater than 1.2.

1 4. (original) The objective of claim 1, wherein the numerical aperture NA
2 is greater than 0.3.

1 5. (original) The objective of claim 1, wherein the objective has an overall
2 imaging ratio greater than 4:1 between the first field plane and the second field plane.

1 6. (original) The objective of claim 1, wherein the objective has a first
2 imaging ratio greater than 1:1 between the first field plane and the intermediate

3 image, and a second imaging ratio greater than 1:1 between the intermediate image
4 and the second field plane.

1 7. (original) The objective of claim 1, wherein the objective has a first
2 imaging ratio greater than 3:1 between the first field plane and the intermediate
3 image.

1 8. (original) The objective of claim 1, wherein the first mirror has a first
2 diameter and the second mirror has a second diameter, and wherein said second
3 diameter has a ratio greater than 3:1 to said first diameter.

1 9. (original) The objective of claim 1, wherein the fourth mirror has a fifth
2 axial distance from the first mirror, and wherein said fifth axial distance is less than 10
3 percent of the fourth axial distance.

1 10. (original) The objective of claim 1, wherein the objective consists of
2 the first, second, third and fourth mirrors.

1 11. (original) The objective of claim 1, further comprising a fifth mirror with
2 a fifth central mirror aperture and a sixth mirror with a sixth central mirror aperture,
3 wherein the sixth mirror follows the fifth mirror in a light path between the intermediate
4 image and the third mirror, and wherein a further intermediate image is formed in said

3 minimum aperture angle in the second field plane, wherein an aperture obscuration is
4 defined as the ratio between the sine of said minimum aperture angle and said
5 numerical aperture NA, and wherein the aperture obscuration has a value of less than
0.6.

1 34. (original) The objective of claim 33, wherein the ratio of the numerical
2 aperture NA to the aperture obscuration is greater than 1.2.

1 35. (original) The objective of claim 29, wherein the numerical aperture
2 NA is greater than 0.3.

1 36. (original) The objective of claim 29, wherein the first mirror is a
2 convex mirror, the second mirror is a concave mirror, the third mirror is a concave
3 mirror, and the fourth mirror is a concave mirror.

1 37. (currently amended) An objective having a first field plane, a first
2 intermediate image plane, a second intermediate image plane, and a second field
3 plane, the objective comprising

4 a first partial objective having a first mirror with a first central mirror
5 aperture and a second mirror with a second central mirror aperture;

6 a second partial objective having a third mirror with a third central mirror
7 aperture and a fourth mirror with a fourth central mirror aperture; and

8 a third partial objective having a fifth mirror with a fifth central mirror

